

GIS supported pre-assessment of radioactively contaminated areas in the agriculturally used parts of the Mulde River floodplains.

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The floodplains of the Mulde River system (Zwickauer and Vereinigte Mulde) are highly contaminated with natural radionuclides as a consequence of the former uranium mining and milling activities in Saxony. In order to identify suitable areas for a systematic investigation of contamination patterns in the agriculturally used parts of the floodplains, a GIS supported analysis of the available data was conducted.

Based on highly resolved geo-data (topographic raster data, different shapes from a State Data Base / land register) GIS-dissection of maps with agriculture areas and flooding areas with flooding frequency resulted in a first selection of areas which could be assessed as potentially contaminated. Data concerning the radionuclide content (U, Th) as well as other contaminants had to be taken from maps with smaller (and different) scales. Because these data does not allow a site specific assessment they had to be supplemented by data from published results of former investigations. The final selection of investigation sites had to take into account legal constraints of accessibility of the land and was carried out by personal inspections of the pre-selected areas.

The results of the GIS supported pre-assessment are not only useful for the selection of sites but also for the transfer of the later results to a more general view.